COLUMBIA RIVERKEEPER · SPOKANE RIVERKEEPER · PUGET SOUNDKEEPER ALLIANCE · NORTH SOUND BAYKEEPER

January 18, 2012

Washington Department of Ecology
Toxics Cleanup Group
fishconsumption@ecy.wa.gov

Via Email

RE: Ecology's Draft Fish Consumption Rates Technical Support Document.

Dear Department of Ecology:

Columbia Riverkeeper, Spokane Riverkeeper, the Puget Soundkeeper Alliance, and North Sound Baykeeper (collectively "Washington Waterkeepers") submit the following comments on Washington Department of Ecology's ("Ecology") draft *Fish Consumption Rates Technical Support Document: A Review of Data and Information About Fish Consumption in Washington* ("Report"). The Report is a critical first step toward adopting Sediment Management Standards, Water Quality Standards, and MTCA Cleanup Standards that accurately reflect fish consumption rates in Washington State and protect public health.

At the outset, the Washington Waterkeepers commends the work of Ecology's Toxics Cleanup Group and the many individuals who helped contribute to this exhaustive document. Analyzing fish consumption rates across Washington State and developing an accurate, protective fish consumption rate is no small feat. The Washington Waterkeepers appreciate the time and dedication of Ecology's staff and the other individuals in the private and public sectors who helped contribute to this important review of fish consumption rates in Washington State.

The cultural, health, and economic benefits of the state's aquatic resources cannot be overstated. Puget Sound, the Columbia River, the Spokane River, and countless other waterbodies across the state provide healthy sources of food for individuals and families from all walks of life. Yet toxic pollution has resulted in dozens of fish advisories and led many individuals to curtail their consumption of fish and shellfish. Despite this fact, Washington has relied on one of the nation's lowest fish consumption rates—6.5 grams per day—for nearly two decades. By using a low fish consumption rate, Washington's regulations which are intended to protect public health and aquatic resources fail to achieve these objectives.

The Report is an important step toward rectifying the state's low fish consumption rate. The Report, however, will not result in any immediate changes to Washington's Sediment Management Standards, Water Quality Standards, or MTCA Cleanup Standards. In fact, the in-water benefits that can stem from this Report require a steadfast commitment by Ecology and decisionmakers across Washington State to restore healthy, toxics-free fish and shellfish by

adopting new Sediment Management Standards, Human Health Criteria Water Quality Standards, and MTCA Cleanup Standards that reflect the Report's findings.

I. Specific Comments on Technical Report.

A. Ecology Should Adopt Site Specific Fish Consumption Rates Only Where those Rates Would be More Protective than the Default Rate.

The Washington Waterkeepers support Ecology's policy decision that the default fish consumption rate should be protective of all people in Washington who eat fish, including those individuals that eat a lot of fish, such as Native Americans, Asian and Pacific Islanders, and some recreational fishers. *See* Report at 92. The Report, however, would benefit from additional clarification on when Ecology would allow the use of a site specific fish consumption rate. *See generally* Report, Ch. 6 at 92 – 100. Like Ecology's decision to adopt a default rate that is protective of "all people in Washington who eat fish," the Washington Waterkeepers urge Ecology to adopt a policy of restricting the use of site specific fish consumption rates to scenarios where the site specific rate would be more protective than the default rate.

The Report states that "[a] site-specific fish consumption rate may be needed when default exposure parameters do not adequately protect the fish-consuming population in question." Report at 92. The Washington Waterkeepers agree that this is an appropriate circumstance for adopting a site specific rate. The Report does not, however, address the question of whether a site specific rate could be used when a third-party asks Ecology to evaluate whether the default rate is *too* protective of a specific area (*i.e.,* a survey or other information indicates a lower fish consumption rate than the state-wide default rate). Due to the inherent challenges of accounting for suppression effects, the Washington Waterkeepers urge Ecology to revise the Report to clarify that site specific rates are only appropriate for the purposes of protecting populations where the default rate is under protective.

Specifically, the Report acknowledges the impact of "suppression effects" when calculating the fish consumption rate. *See* Report at 96. "Suppression effects" refer to suppressed fish consumption rates due to a variety of reasons including habitat degradation, fish and shellfish contamination, lower fish and shellfish abundance, and fewer numbers of Native Americans practicing subsistent or traditional lifestyles. *Id.*; *see also id.* at 107 ("Studies indicate that tribal fish consumption rates are suppressed compared with historical rates and presumable rates that would exist given historical fishing stocks."). Given the impact of suppression effects on fish consumption rates, along with the challenge of extrapolating the actual effect, Ecology should restrict the use of site specific rates to circumstances were the rate would be more protective than the default rate.

B. Ecology Should Account for Salmon and Steelhead Consumption When Calculating the Default Fish Consumption Rate.

The Report currently includes salmon consumption in its recommended fish consumption rate. Ecology discusses this issue at length and requests input from stakeholders on this decision. The Washington Waterkeepers urge Ecology to retain salmon consumption in the final Report's recommendation because studies demonstrate that salmon are exposed to and impacted by bioaccumulative toxins during life stages spent in state-regulated waters.

Appendix E to the Report, "The Question of Salmon," discusses at length salmon in Puget Sound. As the Report notes, Puget Sound is home to resident salmon that spend a portion of their juvenile life and their entire saltwater life in Puget Sound. Puget Sound resident Chinook Salmon currently have a Department of Health fish consumption advisory due to PCBs, suggesting that people should not eat more than two (2) meals a month. A 12-pound fish would thus take a person one (1) year to eat according to this advisory. Ocean migrating Chinook caught in Puget Sound have a similar warning, but recommend limiting consumption to four (4) meals a month. Given the current impact of toxic pollution on Puget Sound salmon, Ecology should not treat the inherent challenge of attributing salmon contaminant body burdens to site-specific contaminants as a barrier to including salmon consumption in the fish consumption rate.

Ecology should also include salmon in the fish consumption rate based on studies demonstrating that juvenile salmon are exposed to toxic pollution in the Columbia River. The Washington Waterkeepers recommend that Ecology expand Appendix E to address Columbia River studies, rather than restricting "The Question of Salmon" to studies on Puget Sound. For example, the Columbia River Intertribal Fish Commission's comments state:

> Recent studies demonstrate that salmon receive a significant percentage of their body contaminant burden from the freshwater portion of their life cycle through contact with contaminated sediments and ingestion of contaminated food sources. (NOAA, 2009, Data Report for Lower Columbia Juvenile Salmon Persistent Organic Pollutant Exposure Assessment, prepared by the Environmental Conservation Division, Northwest Fisheries Science Center, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, for the NOAA Damage Assessment Center and Portland Harbor Natural Resource Trustees; and Sloan, C.A., et. al, 2010, Polybrominated Diphenyl Ethers in Outmigrant Juvenile Chinook Salmon from the Lower Columbia River and Estuary and Puget Sound, Washington, Arch. Contam. Toxicol, (2010), 58:403-414.) Ecology should consider these findings when reviewing the discussion contained in Appendix E – *The Question of Salmon*.

Letter from CRITFC to Ecology (Dec. 20, 2011).

In addition, other studies on toxics in salmon conducted in the lower Columbia River demonstrate that PCBs and DDTs are accumulating in the bodies of outmigrating juvenile salmon. For example, a study published in 2007 showed that almost one-third of juvenile salmon had PCB concentrations that exceeded threshold levels for adverse health effects such as metabolic alterations, reduced growth immune dysfunction, and reduced long-term survival. Johnson, L.L. *et al.* 2007a. Persistent Organic Pollutants in Outmigrant Juvenile Chinook Salmon from the Lower Columbia Estuary, USA. Science of the Total Environment, 374: 342-366; *see also* Meador et al. 2002. Use of Tissue and Sediment-Based Threshold Concentrations of Polychlorinated Biphenls (PCBs) to Protect Juvenile Salmonids Listed Under the U.S. Endangered Species Act. Aquatic Conservation: Marine and Freshwater Ecology, 12: 493-516. Other studies found amounts of DDT in some juvenile salmonid bodies at levels that could contribute to disruption of the endocrine and immune systems. Beckvar *et al.* 2005. Approaches

for linking Whole-Body Fish Residues of Mercury or DDT to Biological Effects Thresholds. Environmental Toxicology and Chemistry, 24: 2094-2105.

The findings of the *Lower Columbia River and Estuary Monitoring: Water Quality and Salmon Sampling Report* ("LCREP study") also support including salmon when calculating the fish consumption rate. The LCREP study explains:

> A salmon fry hatches with toxic contamination in its body from the fats and proteins it inherits from its mother, who deposits toxics during egg production. As the young salmon maneuvers and fees, it takes in additional toxics in several ways: from the water that passes over its skin and through its gills, from bed sediment it ingests as it pursues bottom-dwelling prey, and from suspended sediment it swallows during feeding. The aquatic and terrestrial insects it eats also contain toxics, which then are absorbed in the fish's body.

Lower Columbia River Estuary Partnership. 2007. *Lower Columbia River and Estuary Ecosystem Monitoring: Water Quality and Salmon Sampling Report* at 18. The LCREP study also discusses exposure profiles of salmon populations, stating:

> Because toxic contaminants are unevenly distributed and different salmon populations use different habitats, the types and levels of toxics that juvenile salmon are exposed to in the lower Columbia River and estuary vary from one population to the next. Ocean-type juveniles rear in the lower river for weeks or months during the first year of life. They take refuge and forage in side channels, shallow marshes, and swamps—**the very areas where bioaccumlative toxics can build up if contaminant sources are present**.

Id. at 19 (emphasis added). The LCREP study further explains:

> Given the habitat use and relatively long estuarine residence time of ocean-type juveniles, their contaminant exposure profiles tend to reflect toxics present in the habitat and prey species of the lower river. These toxics include both water-soluble toxics, such as pesticides currently being used, and bioaccumulative toxics, such as PCBs and DDT. Thus ocean-type juveniles experience both short-term and bioaccumulative toxicity.

Id. In short, toxics present in the lower Columbia River account for toxics found in salmon during later life stages.

The impacts of toxics from the Columbia River is not limited to ocean-type juvenile salmonids. The LCREP study explains that stream-type juveniles, which spend most of their first year in freshwater tributaries, are also impacted by toxic pollution in the estuary and freshwater environment. The study states:

> When they [*i.e.,* the stream-type juveniles] do migrate downstream, they move through the estuary more quickly than ocean-types do, using deeper water habitats and spending more time in the plume waters. Consequently, the exposure profile of stream types is

more likely to reflect toxics in upstream tributaries and the water-soluble toxics in the river's deeper channels.

Id. at 19. After conducting monthly juvenile salmon sampling at multiple points along the lower Columbia River, the LCREP study found the following toxic pollutants in juvenile salmon: PCBs, PAHs, Organochlorine, pesticides, PBDEs, and vitellogenin. In particular, the LCREP study detected PCBs, PAHs, DDTs and PBDEs in both the bodies and stomach contents of juvenile salmon, including that prey are a source of exposure to these bioaccumlative toxics. *Id.* at 43. Notably, the LCREP study found that "[t]he highest concentrations of PCBs, PAHs, and PBDEs were observed in salmon from sites near the more industrialized areas of the Columbia River: lower Willamette River, confluence of the Columbia and Willamette rivers, Columbia City, and Beaver Army Terminal. *Id.* In short, the findings of the LCREP study support Ecology's decision to include salmon when calculating the fish consumption rate.

Based on the recorded impacts of toxins on salmon during juvenile life stages, the Washington Waterkeepers urge Ecology to reconsider and omit the following statement in the draft Report: "Washington regulations may have little effect on salmon contaminant levels." Report at 5 (stating in full "However, most salmon leave Washington waters when they are a couple of inches long, spend years in the open ocean, and return to Washington waters at the end of their life cycle. Consequently, contaminants in salmon predominantly come from food they eat while at sea. Thus, Washington regulations may have little effect on salmon contaminant levels.").

Aside from studies demonstrating that toxic pollution impacts salmon during life stages spent in Washington-regulated waterbodies, many Washington waterbodies, including the Columbia River and Puget Sound, influence marine toxic loading. In turn, Ecology should: (1) retain the draft Report's decision to include salmon consumption when calculating the recommended fish consumption rate, (2) expand Appendix E to address Columbia River studies, and (3) omit statements, such as the one identified above, which are not supported by scientific literature demonstrating that toxic pollution in Washington waterbodies impacts salmon.

C. The Washington Waterkeepers Support a Fish Consumption Rate which Protects the Vast Majority of People who Eat Washington-caught Fish.

As the Report accurately points out, Washington's current fish consumption rate fails to protect many Washingtonians, particularly tribal members, Asian and Pacific Islanders, recreational fishers, and others. The Report examines studies which overwhelmingly demonstrate that many Washingtonians eat significantly more fish than the current toxics standards assume. Based on these studies, the Report concludes that a default fish consumption rate in the range of 157 to 267 grams per day (g/day) would be appropriate. The Report also acknowledges that the range of the recommended fish consumption rate does not capture the state's highest fish consumers.

The Washington Waterkeepers support adopting a fish consumption rate that protects the vast majority of people who regularly eat Washington-caught fish which is reflected by the upper

range of the Report's recommended fish consumption rate. The Washington Waterkeepers also agree with the comments of the Northwest Indian Fisheries Commission ("NWIFC"): at a minimum, the fish consumption rate should be no lower than the 175 g/day rate adopted by Oregon's Environmental Quality Commission. The Washington Waterkeepers also agree with the NWIFC comment that the lower range of the recommended fish consumption rate does not fully account for fish consumption rates of Columbia River tribes. Overall, the Washington Waterkeepers agree with the Report's finding that a fish consumption rate dramatically higher than the current rate of 6.5 g/day and EPA's recommended rate of 17.5 g/day is necessary.

II. Conclusion.

The Washington Waterkeepers support Ecology's effort to adopt a new, accurate fish consumption rate. While this endeavor is long overdue, the Report is a critical first step toward addressing major flaws in the current standards which incorrectly assume that Washingtonians eat 6.5 grams of fish per day. We urge Ecology to continue and begin the necessary rulemakings to incorporate the higher fish standard into the Sediment Management Standards, Water Quality Standards, and MTCA Cleanup Standards. Thank you in advance for considering these comments.

Sincerely,

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